

The following claims are presented for examination:

1. (Currently Amended) A method comprising:

receiving, by a processor-based device, a communication that comprises a word that is a natural-language word;

generating by the processor-based device a union combination of terms, based on the word, comprising:

(i) a first set of word-terms, and

(ii) a set of word-classes,

wherein a term is one of a word-term and a word-class;

selecting by the processor-based device a plurality of terms from the union combination of terms, wherein the selecting is based on an information-gain value of each term in the union combination of terms; [[and]]

~~performing, by the processor-based device, latent semantic indexing upon the plurality of terms to determine a category of the word~~

generating by the processor-based device a matrix, wherein:

(i) the matrix comprises a plurality of categories and the plurality of terms, and

(ii) each term in the matrix is associated with at least one category; and

determining from the matrix, by the processor-based device, a category for the word.

2. (Cancelled)

3. (Currently Amended) The method of claim 1 further comprising:

routing the communication, by the processor-based device, the communication to a particular one of a plurality of destination terminals of a communication system,

wherein the routing is based on the category of the word, **and** wherein the communication system comprises the processor-based device and the plurality of destination terminals.

4. (Currently Amended) The method of claim 1 wherein an automatic word class clustering algorithm is utilized to generate **a plurality of word-classes from which the set of word-classes is selected.**

5. (Currently Amended) The method of claim 1 wherein the selecting of the plurality of terms is further based on a percentile value applied to the respective information-gain value[[s]] of **the terms each term** in the **union combination** of terms.

6. (Currently Amended) The method of claim 5 wherein the information-gain value for each term in the **union combination** of terms, indicates the average entropy variations over a plurality of possible categories for each term in the **union combination** of terms.

7. (Currently Amended) The method of claim 1 wherein the category of the word is a cell in a term-category matrix, **and wherein the matrix results from the latent semantic indexing.**

8. (Canceled)

9. (Currently Amended) The method of claim 1 wherein the **union combination** of terms is generated by interleaving individual word-terms with their corresponding word-classes.

10. (Currently Amended) A method comprising:

receiving, by a processor-based device, a communication that comprises **[[a]] at least one word, wherein each of the at least one word [[that]] is a natural-language word;**

generating by the processor-based device a **union combination** of terms, **based on the word,** comprising:

- (i) a **first** set of word-terms, and
- (ii) a set of word-classes,

wherein a term is one of a word-term and a word-class;

selecting by the processor-based device a plurality of terms from the **union combination** of terms, wherein the selecting is based on an information-gain value of each term in the **union combination** of terms; **[[and]]**

generating by the processor-based device a term-category matrix, wherein:

- (i) the term-category matrix comprises the plurality of terms and a plurality of categories, and**
- (ii) each term in the term-category matrix is associated with at least one category; and**

classifying the communication by utilizing a joint classifier upon the **plurality of terms at least one word**, wherein the joint classifier comprises **at least one the term-category matrix that results from the selecting based on information-gain values and from applying latent semantic indexing to the plurality of terms.**

11. (Currently Amended) The method of claim 10 wherein a cell *i, j* of the term-category matrix **comprises represents** a classification by the processor-based device of an *i-th* selected term into a *j-th* category.

12. (Currently Amended) A method comprising:

receiving, by a processor-based device, a communication that comprises a word that is a natural-language word;

generating by the processor-based device a union combination of terms, based on the word, comprising:

- (i) a **first** set of word-terms, and
- (ii) a set of word-classes,
wherein a term is one of a word-term and a word-class;

selecting by the processor-based device a plurality of terms from the union combination of terms, wherein the selecting is based on an information-gain value of each term in the union combination of terms, and

wherein the selecting comprises:

- i) calculating an information-gain value for each term in the union combination of terms that corresponds to the word,
- ii) sorting the terms in the union combination of terms in a descending order of information-gain value,
- iii) setting a threshold of an information-gain value corresponding to a specified percentile, and
- iv) selecting only the terms from the union combination of terms having that have an information-gain value greater than or equal to the threshold to generate [[a]] the plurality of terms.

13. (Currently Amended) The method of claim 12 wherein the selected terms in the plurality of terms are processed by the processor-based device to form a term-category matrix from which a joint classifier determines at least one **one or more categories** **category** for the word, **and wherein the processor-based device comprises the joint classifier.**

14. (Currently Amended) The method of claim 12 further comprising:
performing by a joint classifier joint latent semantic indexing upon the plurality of terms to determine a category for the word, wherein the processor-based device comprises the joint classifier.

generating by the processor-based device a term-category matrix, wherein:

(i) the term-category matrix comprises the plurality of terms and a plurality of categories, and

(ii) each term in the term-category matrix is associated with at least one category;

selecting from the term-category matrix, by the processor-based device, a category for the word; and

routing the communication, by the processor-based device, to a particular one of a plurality of destination terminals of a communication system, wherein the routing is based on the category of the word, and wherein the communication system comprises the processor-based device and the plurality of destination terminals.

15. (Currently Amended) An apparatus comprising:

a processor-based device operative to:

receive a communication that comprises a word that is a natural-language word; and

classify the communication by utilizing a joint classifier that is operative to:

generate a union combination of terms, based on the word, comprising:

(i) a set of word-terms, and

(ii) a set of word-classes,

wherein a term is one of a word-term and a word-class;

select a plurality of terms from the union combination of terms, based on an information-gain value of each term in the union combination of terms; and

perform latent semantic indexing upon the plurality of terms to
determine a category of the word, based on a term-category matrix,
wherein:

(i) the term-category matrix comprises the plurality of terms and
a plurality of categories, and

(ii) each term in the term-category matrix is associated with at
least one category.

16. (Currently Amended) The apparatus of claim 15 wherein the processor-based device comprises a switch that is operative to route the communication, based on the category of the word determined by the joint classifier, to a destination terminal of a communication system that comprises the apparatus and the destination terminal.

17. (Currently Amended) The apparatus of claim 15 wherein the category of the word is a cell in [[a]] the term-category matrix, and wherein the matrix results from the latent semantic indexing.

18. (Currently Amended) An article of manufacture comprising:
a machine-readable storage medium that is a non-transitory storage medium and
that comprises software code that when executed implements the steps of:
receiving a communication that comprises a word that is a natural-language word;
generating a union combination of terms comprising:
(i) a set of word-terms, and
(ii) a set of word-classes,
wherein a term is one of a word-term and a word-class;
selecting a plurality of terms from the union combination of terms, wherein the
selecting is based on an information-gain value of each term in the union combination of
terms;
performing latent semantic indexing upon the plurality of terms applying a
joint classifier to determine a category of the word, wherein the category of the word is a
cell in a term-category matrix that results from the latent semantic indexing; and
routing the communication, based on the category of the word, to a destination
terminal in a communication system that comprises the machine-readable storage medium
and the destination terminal.
